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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,163	01/04/2002	Shigeki Ogura	2001-1805A	1761

513 7590 09/18/2003

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EXAMINER

COURSON, TANIA C

ART UNIT	PAPER NUMBER
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2859

DATE MAILED: 09/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/035,163

Applicant(s)

OGURA, SHIGEKI

Examiner

Tania C. Courson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-3 and 9-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Kenny et al. (US 6,586,722 B1).

Kenny et al. disclose in Figure 8c, a strain sensor with optical fiber Bragg gratings comprising:

With respect to Claims 1-3 and 9-10:

- a) a strain sensor member (Fig. 8c) having a strain sensing section (Fig. 8c) for receiving stress in a longitudinal direction (Fig 8c), a fiber Bragg grating (Fig.

- 8c, FBG 1A,1B) fastened to said strain sensor member within the strain sensing section (Fig. 8c), having a first end oriented in the longitudinal direction and a second end oriented in a lateral direction perpendicular to a longitudinal direction (Fig. 8c) and a fiber axis describing one quarter of a circular arc between a first end and the second end (Fig. 8c, Bend B);
- b) wherein said strain sensor member has a form of a plate of constant thickness, including the strain sensing section as a central section , further including a pair of stress-transmitting appendages joined to longitudinally opposite sides of the strain sensing section, by which the stress is applied to the strain sensing section (column 6, lines 65-67);
 - c) wherein the strain sensing section has a constant width in the lateral direction (column 6, lines 65-67);
 - d) wherein the first end and second end of said fiber Bragg grating are oriented at right angles with respect to one another (Fig. 8c), and;
 - e) wherein the stress is received in the longitudinal direction of said fiber Bragg grating strain sensor, the first end of said fiber Bragg grating becomes elongated and the second end of said fiber Bragg grating becomes compressed (Fig. 8c).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4-8 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenny et al.

Kenny et al. disclose a sensor as stated above in paragraph 2.

Kenny et al. do not disclose wherein stress-transmitting appendages are wider than a strain sensing section in the lateral direction, wherein said stress-transmitting appendages and strain sensing section form an H shape, wherein the strain sensing section has a tapered shape, wherein the stress-transmitting appendages are at least as wide, in the lateral direction, as the sides of the strain sensing section to which they are joined, and wherein the width of the strain sensing section decreases continuously from one of the longitudinally opposite sides to another one of the longitudinally opposite sides, wherein said stress-transmitting appendages each have a width which is greater than a width of the strain sensing section and wherein one of said stress-transmitting appendages at a wide end of the strain sensing section has a width (w_1) equal to the width (w_L) of this end of the strain sensing section and the other one of said stress-transmitting appendages at a narrow end of the strain sensing section has a width (w_2) greater than w_1 and w_L .

With respect to claims 4-8 and 11-12: the shape of the stress-transmitting appendages and the strain sensing section, i.e., one is wider or as wide as the other, form an H shape, tapered shape, width decreases continuously, etc., absent any criticality, are only considered to be obvious modifications of the shape of the strain sensing section (column 6, lines 57 through

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column 7, line 6) disclosed by Kenny et al. as the courts have held that a change in shape or configuration, without any criticality, is within the level of skill in the art as the particular shape claimed by Applicant is nothing more than one of numerous shapes that a person having ordinary skill in the art will find obvious to provide using routine experimentation based on its suitability for the intended use of the invention. See *In re Dailey*, 149 USPQ 47 (CCPA 1976). Therefore, one skilled in the art would change the shape of the stress-transmitting appendages and the strain sensing section in order to suit the needs of the user of the device.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior art cited on PTO-892 and not mentioned above disclose fiber Bragg grating sensors:

Matsuda. (JP 2000097786, translated copy)

Cassarly et al. (US 6,192,176 B1)

Haran et al. (US 6,125,216)

Hay et al. (US 5,877,426)

Ferdinand et al. (US 5,726,744)

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tania C. Courson whose telephone number is (703) 305-3031.

The examiner can normally be reached on Monday-Friday from 8:00AM to 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez, can be reached on (703) 308-3875. The fax number for this Organization where this application or proceeding is assigned is (703) 308-7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



DIEGO F.F. GUTIERREZ
SUPERVISORY PATENT EXAMINER
GROUP ART UNIT 2859

TCC
September 5, 2003